Remarks/Arguments

Amendments to the Specification

Applicant has amended paragraphs **[0030]**, **[0031]**, and **[0032]** to remove references to mirror elements **32**, **34**, **36**, **38**, **40** and **42**, microprisms **46**, **48**, **50**, **52**, **54** and **56**, and parts **62** and **64** to obviate the Examiner's objections to the drawings. Applicant courteously submits that the mirror elements, microprisms and parts were referred to as a range of numbers, *i.e.*, mirror elements **31-43**, microprisms **45-57** and parts **61-65**; however, only the odd numbers within those ranges were used in the figures. Applicant respectfully submits that no new matter has been added by these amendments.

The Objection to the Drawings

The Examiner has objected to the use of Reference Numerals (**32**, **34**, **36**, **38**, **40** and **42**), (**46**, **48**, **50**, **52**, **54** and **56**) and (**62** and **64**), disclosed in paragraphs **[0030]-[0032]**, respectively, as not being properly illustrated and/or labeled. Applicant has amended paragraphs **[0030]-[0032]** thereby rendering this objection moot. Reconsideration and withdrawal of this objection is appropriate and respectfully requested.

Rejection of Claims 11 and 21 under 35 U.S.C. § 112

The Examiner has rejected Claims 11 and 21 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner has objected to the use of the language "and/or" in Claim 11, line 2, as vague and indefinite due to the fact that claim language must be expressed in the alternative only.

Applicant has amended Claim 11 to remove the language "and/or". In view of the foregoing, Applicant courteously submits that reconsideration and withdrawal of this rejection is appropriate and respectfully requested.

Rejection of Claims 1 and 10-12 Under 35 U.S.C. § 102

The Examiner has rejected Claims 1 and 10-12 under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 6,204,946 (*Aksyuk*). Applicant respectfully traverses this rejection based on the following reasons.

"A claim is anticipated only if each and every element as set forth in the claims is found, either expressly or inherently described in a single prior art reference." *Vandergaal Bros. v. Union Oil of California*, 814 F.2d 628, 631; 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). In other words, the elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, *i.e.*, identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990).

Applicant courteously submits that amended Claim 1 recites an optical device that is not taught in *Aksyuk*. More specifically, *Aksyuk* does not teach an optical device comprising first and second light beams from first and second directions, respectively, where the first direction is different than the second direction, a dispersive element arranged to split the first light beam into various wavelengths and also arranged to collinearly unite the first and second light beams, and a microstructured element arranged to deflect the first light beam from the first direction and the second light beam from the second direction, as taught in Applicant's amended Claim 1. Although *Aksyuk* may teach a reconfigurable wavelength division multiplex add/drop device which uses micromirrors and includes a modulator array, the *Aksyuk* device does not include first and second light beams from first and second directions, respectively. Applicant respectfully asserts that *Aksyuk* only teaches a first light beam from a first direction, and therefore also fails to teach the other missing elements.

Applicant courteously submits that "[u]nit 10 has a first port 16 which receives optical signals from an optical fiber 5." (*Aksyuk*, Col. 2, lines 31-32). Then, "a fold mirror 22 may be introduced to direct only the attenuated reflected light into an output collimating lens 24 which is

used to focus the light onto a separate output fiber 7." (*Aksyuk*, Col. 3, lines 3-6). As set forth in the specification, *Aksyuk* teaches two modes of operation of the device, *i.e.*, reflective mode and transmissive mode. "In transmissive mode, select wavelengths are directed or transmitted from first port 16 to second port 26. In reflective mode, select wavelengths input at first port 16 are reflected back to the same port." (*Aksyuk*, Col. 3, lines 17-20). In view of the foregoing, one of ordinary skill in the art will appreciate that *Aksyuk* includes a single light beam from a single direction, which in turn is either transmitted to an output or reflected back through the input. In other words, *Aksyuk* does not teach an optical device comprising a first and second light beams from first and second directions, respectively, where the first direction is different than the second direction, a dispersive element arranged to split the first light beam into various wavelengths and also arranged to collinearly unite the first and second light beams and a microstructured element arranged to deflect the first light beam from the first direction and the second light beam from the second direction.

Contrarily, as recited in Applicant's amended Claim 1, the instant invention comprises an optical device having first light beam 13, second light beam 19, dispersing element 3 arranged to split first light beam 13 into various wavelengths and also arranged to collinearly unite first and second light beams 13 and 19, and microstructured element 9 arranged to deflect first light beam 13 from the first direction and second light beam 19 from the second direction. This arrangement is clearly shown in Figures 1, 5 and 6, and set forth in paragraphs [0027], [0028], [0032] and [0033].

Hence, as Applicant's amended Claim 1 contains an arrangement of elements not taught in *Aksyuk*, *i.e.*, an optical device comprising first and second light beams from first and second directions, respectively, where the first direction is different than the second direction, a dispersive element arranged to split the first light beam into various wavelengths and also arranged to collinearly unite the first and second light beams, and a microstructured element arranged to deflect the first light beam from the first direction and the second light beam from the second direction, it generally follows that *Aksyuk* does not anticipate Applicant's amended

Claim 1. In like fashion, as Claims 10-12 contain all the limitations of the claim from which they depend, *i.e.*, amended Claim 1, it follows that Claims 10-12 are also not anticipated by *Aksyuk*.

Furthermore, as *Aksyuk* does not teach, suggest or motivate one of ordinary skill in the art to include the arrangement of elements as recited in Applicant's amended Claim 1, *i.e.*, an optical device comprising first and second light beams from first and second directions, respectively, where the first direction is different than the second direction, a dispersive element arranged to split the first light beam into various wavelengths and also arranged to collinearly unite the first and second light beams, and a microstructured element arranged to deflect the first light beam from the first direction and the second light beam from the second direction, it follows that amended Claim 1 is nonobvious in view of *Aksyuk*. Again, due to their dependency from amended Claim 1, Claims 10-12 are also nonobvious in view of *Aksyuk*.

Therefore, in view of the foregoing, Applicant respectfully asserts that Claims 1 and 10-12, are in condition for allowance, which action is courteously requested.

Rejection of Claims 1, 10 and 12 Under 35 U.S.C. § 102

The Examiner has rejected Claims 1, 10 and 12 under 35 U.S.C. § 102(e) as being anticipated by United States Patent No. 6,947,628 (*Peng*). Applicant respectfully traverses this rejection based on the following reasons.

Applicant courteously submits that amended Claim 1 recites an optical device that is not taught in *Peng*. More specifically, *Peng* does not teach an optical device comprising first and second light beams from first and second directions, respectively, where the first direction is different than the second direction, a dispersive element arranged to split the first light beam into various wavelengths and also arranged to collinearly unite the first and second light beams, and a microstructured element arranged to deflect the first light beam from the first direction and the second light beam from the second direction, as taught in Applicant's amended Claim 1. Although *Peng* may teach dynamic wavelength-selective optical add-drop switches, the *Peng*

device does not include first and second light beams from first and second directions, respectively, where a dispersive element is arranged to split the first light beam into various wavelengths and also is arranged to collinearly unite the first and second light beams. Moreover, *Peng* fails to teach a microstructured element arranged to deflect the first light beam from the first direction and the second light beam from the second direction. Applicant respectfully asserts that although *Peng* teaches first and second light beams, the first and second light beams are independently projected onto unique dispersive elements and microstructured elements, and none of the dispersive elements of *Peng* are arranged to both split the first light beam into various wavelengths and arranged to collinearly unite the first and second light beams.

Applicant courteously submits that quite simply *Peng* sets forth this distinction in the specification. "An improved wavelength-selective optical add-drop switch has been disclosed. The add-drop wavelength switch comprises a first and second 1x2 wavelength switch optically coupled to one another via at least one mirror. Each of the first and second 1x2 wavelength switches comprises a switch input and two switch outputs, a wavelength dispersive medium optically coupled to the switch input and the two switch outputs, a lens optically coupled to the wavelength dispersive medium and a segmented beam steering apparatus optically coupled to the lens opposite to the wavelength dispersive medium." (*Peng*, Col. 8, lines 48-58). In view of the foregoing, one of ordinary skill in the art will appreciate that as *Peng* includes a single switch input and two switch outputs, it is not possible to introduce first and second light beams into the device, *e.g.*, via the microstructured element, as recited in Applicant's amended Claim 1. In other words, *Peng* does not teach an optical device comprising first and second light beams from first and second directions, respectively, where the first direction is different than the second direction, a dispersive element arranged to split the first light beam into various wavelengths and also arranged to collinearly unite the first and second light beams, and a microstructured element arranged to deflect the first light beam from the first direction and the second light beam from the second direction.

Hence, as Applicant's amended Claim 1 contains an arrangement of elements not taught in *Peng*, *i.e.*, an optical device comprising first and second light beams from first and second directions, respectively, where the first direction is different than the second direction, a dispersive element arranged to split the first light beam into various wavelengths and also arranged to collinearly unite the first and second light beams, and a microstructured element arranged to deflect the first light beam from the first direction and the second light beam from the second direction, it generally follows that *Peng* does not anticipate Applicant's amended Claim 1. In like fashion, as Claims 10 and 12 contain all the limitations of the claim from which they depend, *i.e.*, amended Claim 1, it follows that Claims 10 and 12 are also not anticipated by *Peng*.

Furthermore, as *Peng* does not teach, suggest or motivate one of ordinary skill in the art to include the arrangement of elements as recited in Applicant's amended Claim 1, *i.e.*, an optical device comprising first and second light beams from first and second directions, respectively, where the first direction is different than the second direction, a dispersive element arranged to split the first light beam into various wavelengths and also arranged to collinearly unite the first and second light beams, and a microstructured element arranged to deflect the first light beam from the first direction and the second light beam from the second direction, it follows that amended Claim 1 is nonobvious in view of *Peng*. Again, due to their dependency from amended Claim 1, Claims 10 and 12 are also nonobvious in view of *Peng*.

Therefore, in view of the foregoing, Applicant respectfully asserts that Claims 1, 10 and 12, are in condition for allowance, which action is courteously requested.

Rejection of Claims 1, 10-12, 21 and 22 Under 35 U.S.C. § 102

The Examiner has rejected Claims 1, 10-12, 21 and 22 under 35 U.S.C. § 102(e) as being anticipated by United States Patent No. 6,459,484 (*Yokoi*). Applicant respectfully traverses this rejection based on the following reasons.

Applicant courteously submits that amended Claim 1 recites an optical device that is not taught in *Yokoi*. More specifically, *Yokoi* does not teach an optical device comprising first and second light beams from first and second directions, respectively, where the first direction is different than the second direction, a dispersive element arranged to split the first light beam into various wavelengths and also arranged to collinearly unite the first and second light beams, and a microstructured element arranged to deflect the first light beam from the first direction and the second light beam from the second direction, as taught in Applicant's amended Claim 1. Although *Yokoi* may teach a scanning optical apparatus, the *Yokoi* device does not include first and second light beams from first and second directions, respectively, where a dispersive element is arranged to split the first light beam into various wavelengths and also is arranged to collinearly unite the first and second light beams. Moreover, *Yokoi* fails to teach a microstructured element arranged to deflect the first light beam from the first direction and the second light beam from the second direction. Applicant respectfully asserts that *Yokoi* only teaches a first light beam from a first direction, and therefore also fails to teach the other missing elements.

Applicant courteously submits that quite simply *Yokoi* sets forth this distinction in the specification. Regarding Figure 10, "The laser beams emitted from the two lasers 31 and 32 are mixed by a dichroic mirror 38." (*Yokoi*, Col. 20, lines 62-63). "The laser beam then travels through the pupil relay lens 49 and the objective lens 50 to scan the specimen 51 as a laser spot." (*Yokoi*, Col. 21, lines 1-3). "By the dispersion behavior of the prism 44, the wavelength information of the light beam is converted into angles at which light beams emerge from the prism 44, and the light beams form collected spots in accordance with wavelengths on the mirror array 42 through the collector lens 43." (*Yokoi*, Col. 21, lines 13-18). "In this case, the wavelength information converted into such angles of emergence is transferred into positional information on the mirror array 42 so that the positions of the mirror microelements 41 constituting the mirror array 42 correspond to individual wavelengths as they are." (*Yokoi*, Col. 21, lines 19-23). In view of the foregoing, one of ordinary skill in the art will appreciate that

Yokoi includes a dispersive element that only splits a first light beam into a plurality of wavelengths; however, as *Yokoi* fails to disclose a second light beam, it necessarily follows that the dispersive element of *Yokoi* is not arranged to also collinearly unite the first and second light beams, as recited in Applicant's amended Claim 1. In other words, *Yokoi* does not teach an optical device comprising first and second light beams from first and second directions, respectively, where the first direction is different than the second direction, a dispersive element arranged to split the first light beam into various wavelengths and also arranged to collinearly unite the first and second light beams, and a microstructured element arranged to deflect the first light beam from the first direction and the second light beam from the second direction.

Hence, as Applicant's amended Claim 1 contains an arrangement of elements not taught in *Yokoi*, *i.e.*, an optical device comprising first and second light beams from first and second directions, respectively, where the first direction is different than the second direction, a dispersive element arranged to split the first light beam into various wavelengths and also arranged to collinearly unite the first and second light beams, and a microstructured element arranged to deflect the first light beam from the first direction and the second light beam from the second direction, it generally follows that *Yokoi* does not anticipate Applicant's amended Claim 1. In like fashion, as Claims 10-12, 21 and 22 contain all the limitations of the claim from which they depend, *i.e.*, amended Claim 1, it follows that Claims 10-12, 21 and 22 are also not anticipated by *Yokoi*.

Furthermore, as *Yokoi* does not teach, suggest or motivate one of ordinary skill in the art to include the arrangement of elements as recited in Applicant's amended Claim 1, *i.e.*, an optical device comprising first and second light beams from first and second directions, respectively, where the first direction is different than the second direction, a dispersive element arranged to split the first light beam into various wavelengths and also arranged to collinearly unite the first and second light beams, and a microstructured element arranged to deflect the first light beam from the first direction and the second light beam from the second direction, it

follows that amended Claim 1 is nonobvious in view of *Yokoi*. Again, due to their dependency from amended Claim 1, Claims 10-12, 21 and 22 are also nonobvious in view of *Yokoi*.

Therefore, in view of the foregoing, Applicant respectfully asserts that Claims 1, 10-12, 21 and 22, are in condition for allowance, which action is courteously requested.

Conclusion

Applicant respectfully submits that the present application is in condition for allowance, which action is courteously requested. The Examiner is invited and encouraged to contact the undersigned attorney of record if such contact will facilitate an efficient examination and allowance of the application.

Respectfully submitted,

/Robert C. Atkinson/

Robert C. Atkinson
Attorney for Applicant
Registration No. 57,584
Simpson & Simpson, PLLC
5555 Main Street
Williamsville, NY 14221-5406
Telephone No. 716-626-1564
Facsimile No. 716-626-0366

RCA/

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